

REMARKS

In the Office Action, Claims 1-23 were considered, as Claims 24-35 were previously withdrawn from consideration and cancelled in view of the divisional application that was filed. In the Office Action, Claims 1-3 were rejected based on a judicially created doctrine of nonstatutory obviousness-type double patenting ("ODP") as being unpatentable over Claims 1, 7 and 8 of U.S. patent application 10/691,903 (the " '903 appl."); Claims 1-3 were rejected based on a judicially created doctrine of nonstatutory ODP as being unpatentable over Claims 1, 6 and 8 of U.S. patent application 10/692,894 (the " '894 appl."); and Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,865,237 to Boariu et al. in view of U.S. patent publication 2003/0174782 of Papadias et al.

The finding of allowable subject matter in Claims 3-23 is gratefully acknowledged.

It is respectfully submitted that neither ODP rejection of Claims 1-3 is proper since both cited applications were filed after the instant application. The '903 appl. was filed October 23, 2003, and the '894 appl. was filed on October 24, 2003. In contrast, the instant application was previously filed, on October 9, 2003. Since the '903 and '894 applications are later-filed applications, the ODP rejection should be withdrawn, in accordance with the instruction provided by MPEP 804.I.B(1):

"If 'provisional' ODP rejections in two applications are the only rejections remaining in those applications, the examiner should withdraw the ODP rejection in the earlier filed application thereby permitting that application to issue without need of a terminal disclaimer."

Accordingly, as this instant application is the earlier filed application, the ODP rejections should be withdrawn to allow this instant application to issue without a terminal disclaimer.

Turning now to the rejection of Claims 1 and 2 in view of the combination of Boariu et al. and Papadias et al., in the Office Action at page 4, Boariu et al. was cited as allegedly disclosing the recitation of the transmission coding matrix having at least two columns orthogonal to each other. However, neither the cited portions nor elsewhere does Boariu et al. disclose or suggest such recitation. As explained at page 6, lines 21-22, of the Specification of

the pending application, it is necessary, in order “[t]o achieve the remarkable properties of the space-time block coding, the columns of the transmission matrix must be orthogonal to each other.” However, Boariu et al. fails to disclose a transmission coding matrix having at least two columns orthogonal to each other.

In the Office Action, Col. 2, lines 9-40, Col. 6, lines 18-23, Col. 7, lines 1-26, Col. 8, lines 33-38 and Col. 12, lines 29-49, of Boariu et al. were all cited. However, none of these provisions of Boariu et al. discloses a transmission coding matrix having at least two columns orthogonal to each other, as in Claim 1 of the pending application.

The first citation to Boariu et al. simply provides “review of mathematical tools,” (Col. 1, line 29, which repeats an axiom that “Vectors $|a\rangle|b\rangle \in V$ are orthogonal if $\langle a|b\rangle=0$ ” (Boariu et al., Col. 2, line 40.) The next citation explains that an “extension of the Alamouti method to more than two antennas is not straightforward.” (Col. 6, lines 20-21, of Boariu et al.) Neither citation discloses a transmission coding matrix having at least two columns orthogonal to each other, as in Claim 1 of the pending application.

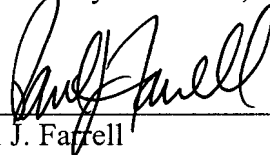
The further citations to Boariu et al. are similarly deficient. Col. 7, lines 1-26, of Boariu et al. discusses rates of $\frac{1}{2}$ and $\frac{3}{4}$ for transmitting on three and four antennas. Col. 8, lines 33-38, of Boariu et al. discusses S-T block codes (STC) that can be extended to four transmit antennas. The last citation provided is Col. 12, lines 29-49, of Boariu et al., discusses a sub-optimal class “based on the Radon-Hurwitz sub-matrix.” Nowhere, however, does Boariu et al. disclose a transmission coding matrix having at least two columns orthogonal to each other, as in Claim 1 of the pending application.

Papadias et al. does not cure the failure of Boariu et al. to disclose a transmission coding matrix having at least two columns orthogonal to each other. Accordingly, the rejection of Claim 1 and Claim 2, which depends from Claim 1, should be withdrawn.

Finally, it is noted that the Office Action Summary page incorrectly indicates that "The specification was objected to by the Examiner." That is, the Examiner was contacted by applicant's representative to ask why, on the Office Action Summary page, the box indicating that "The specification was objected to by the Examiner" was checked. The Examiner indicated that his practice is to always check this box when the specification exceeds 20 pages in length, and the Examiner kindly confirmed such objection need not be addressed in this response.

Accordingly, the Specification and Claims 1-23 are believed to be in condition for allowance. If there are any questions or if additional information is required, please contact the undersigned at the telephone number listed below.

Respectfully submitted,



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